Customer Care Solutions
RH-20 Series Transceivers

General Information

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RH-20 Product Selection

The **RH-20** is a Triple Band transceiver unit designed for the EGSM900, GSM1800 and GSM1900 (EDGE) networks. It is a GSM900 phase 2 power class 4 transceiver (2W) and a GSM1800/1900 power class 1 (1W) transceiver. It is also an EDGE900 power class E2 (0.5W/27dBm) and an EDGE1800/1900 power class E2 (0.4W/26dBm) transceiver. The products share the 1AO radio module and differ in details on mechanics. Refer to the diagrams on the following pages.

RH-20 Product and modules

Name	Type code	Material code/ module type	Module code
Basic transceiver	RH-20	0504790	
Radio module	1AO		0202020
UI board	1dm		0202023
Mechanics assembly parts			0262937
Software module (basic SW)			On Flash memory

Figure 1: RH-20 transceiver

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Accessories List

Batteries	Product code:
Battery BLD-3 780mAH Li-Ion	0670334
Chargers	**Product code:**
AC Travel Charger ACP-7E (EUR) 207-253 Vac	0675144
AC Travel Charger ACP-7U (US) 108-132 Vac	0675143
AC Travel Charger ACP-7C (China) 198-242 Vac	0675158
AC Travel Charger ACP-7X (UK) 207-253 Vac	0675145
AC Travel Charger ACP-7H (Hong Kong) 180-220 Vac	0675146
AC Travel Charger ACP-7A (AUS) 216-264 Vac	0675148
Performance Travel Charger ACP-8E (EUR) 90-264 Vac	0675195
Performance Travel Charger ACP-8K (Korea) 90-264 Vac	0675199
Performance Travel Charger ACP-8X (UK) 90-264 Vac	0675197
Performance Travel Charger ACP-8U (US) 90-264 Vac	0675196
Performance Travel Charger ACP-8C (China) 90-264 Vac	0675211
Performance Travel Charger ACP-8A (Australia) 90-264 Vac	0675214
Performance Travel Charger ACP-9E (EUR)	0675149
Performance Travel Charger ACP-9U (US)	0675151
Performance Travel Charger ACP-9X (UK)	0675150
Performance Travel Charger ACP-9A (AUS)	0675152
Performance Travel Charger ACP-9J (Japan)	0675153
Performance Travel Charger ACP-9UR (US)	0675159
Performance Travel Charger ACP-9UJ (Brazil)	0675169
Performance Travel Charger ACP-9C	0675204
Performance Travel Charger ACP-9UB	0675224
Performance Travel Charger ACP-9G (Brazil)	0675225
ACP-12E Travel Charger (EUR) 90-264 Vac	0675294
ACP-12X Travel Charger (UK) 90-264 Vac	0675296
ACP-12U Travel Charger (US) 90-264 Vac	0675303
ACP-12UB Travel Charger (Brazil) 90-264 Vac	0675203
ACP-12G Travel Charger (US) 90-264 Vac	0675295
ACP-12C Travel Charger (China) 90-264 Vac	0675297
ACP-12A Travel Charger (Australia) 90-264 Vac	0675300

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ACP-12AR Travel Charger (Argentina) 90-264 Vac	0675298
Portable and Office Accessories	**Product code:**
Stereo Headset HDS-3	0694093
Inductive Loopset LPS-4	0630443
Cigarette Lighter Charger LCH-12	0675120
Battery Charging stand DDC-1	0675243
Connectivity Desk Stand DCV-14	0675323
Connectivity Adapter Cable DKU-5	0730235
Music Stand DT-1	0694119
TTY-Adapter HDA-10	
Camera Headset HS-1C	0694124
Mobile Accessories: Carkit 143 (Americas)	**Product code:**
Handsfree unit HFU-4	0694103
Mobile Holder MBC-15S	0650041
Mounting plate MKU-1	0620036
Handsfree microphone HFM-8	0690016
External HF speaker HFS-12	0629009
System cable SCU-4	0630471
Power cable PCU-4	0630478
Boom headset HDB-4	0694094
Antenna Coupler AXF-15S	0750189

Mobile accessories (not included in Carkit Sales Pack):

Headrest handsfree BHF-1	0694102

Technical Specifications

General Specifications of Transceiver RH-20

Unit	Dimensions (mm) (L x W x T)	Weight (g)	Volume (cm^3)
Transceiver with BLD-3 780mAh Li-Ion battery pack	106 x 45 x 17.5	83	68

Table 1: Main RF characteristics

Parameter	Unit and value
Cellular system	EGSM900/GSM1800/GSM1900
RX Frequency range	EGSM900: 925 ... 960 MHz GSM1800: 1805...1880 MHz GSM1900: 1930...1990 MHz
TX Frequency range	EGSM900: 880 ... 915 MHz GSM1800: 1710 ...1785 MHz GSM1900: 1850 ...1910 MHz
Duplex spacing	EGSM900: 45 MHz GSM1800: 95 MHz GSM1900: 80 MHz
Channel spacing	200 kHz
Number of RF channels	EGSM900: 174 GSM1800: 374 GSM1900: 300
Output Power	EGSM900: GSMK 5...33 dBm EGSM900: 8-PSK 5...27 dBm GSM1800: GSMK 0...30 dBm GSM1800: 8-PSK 0...26 dBm GSM1900: GSMK 0...30 dBm GSM1900: 8-PSK 0...26 dBm
Number of power levels GSMK	EGSM900: 15 GSM1800: 16 GSM1900: 16
Number of power levels 8-PSK	EGSM900: 12 GSM1800: 14 GSM1900: 14

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Battery endurance

Nokia measurements of the operational times in GSM 900/ 1800 are:

Talk time*	
Battery : BLD-3	up to 2.5 – 7 hours
Talk time variations:	
Integrated Handsfree (IHF) talk time**	up to 1 h 45 min – 3 h 45 min
Standby time*	
Battery: BLD-3	up to 180 - 430 hours
Radio + HDS-3	up to 28 hours
Radio + IHF	up to 13 hours

Nokia measurements of the operational times in GSM 1900 are:

Talk time*	
Battery: BLD-3	up to 3.5 – 7 hours
Talk time variations:	
Integrated Handsfree (IHF) talk time	**up to 1 h 45 min – 3 h 45 min
Standby time*	
Battery: BLD-3	up to 170 – 290 hours
Standby time variations***:	
Radio + HDS-3	up to 28 hours
Radio + IHF	up to 13 hours

Variation in operating times may occur depending on SIM card, network and usage settings, usage style and environments. Talk time is increased by up to 30% if half rate is active and reduced by 5% if enhanced full rate is active.

**Note: Volume level 7 used in calculation. Calculated from talk times.

***Note: Volume level 7 used in calculation. Phone idle.

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Environmental conditions

Environmental condition	Ambient temperature	Notes
Normal operation	-10 °C ... +55 °C	Specifications fulfilled
Reduced performance	+55 °C ... +65 °C	Operational only for short periods
Intermittent operation	-20 °C ... -10 °C and +65 °C ... +85 °C	Operation not guaranteed but an attempt to operate will not damage the phone
No operation	-40 °C ... -20 °C	Operation not possible but an attempt to operate will not damage the phone
No operation or storage	< -40 °C and > +85 °C	No storage; an operation attempt may cause permanent damage
Charging allowed	-25 °C ... +60 °C	
Long term storage conditions	0 °C ... +40 °C	

Transceiver Features

Transceiver main HW parts / features include:

- GPRS
- EGPRS
- HSCSD
- Integrated Stereo FM radio with external audio amplifier
- Full graphic Colour Display
- Jack IV style UI with four soft keys
- Integrated IR link & internal data
- Internal vibra
- Integrated Hands Free (IHF) Speaker
- Pop-Port(TM) System Connector
- Plug-in SIM card below the back cover of the phone
- Back-mounted antenna (no connection for external antenna)

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Electrical Characteristics

Absolute Maximum Ratings

Parameter	Min.	Typical	Max.	Unit
Battery Voltage, Idle	-0.3		5.5	V
Battery Voltage, Call	-0.3		4.8	V
Charger Input Voltage	-0.3		16	V
Charging Current			850	mA

Supply Voltages

Parameter	Min.	Typical	Max.	Unit / Notes
Battery Voltage	3.1	3.6	4.2	V / SW cut-off 3.1 V

Current Consumption

Condition	Min.	Typical	Max.	Unit
Call (MoU) GSM 900 GSM1800 GSM1900 EDGE 900 EDGE1800 EDGE1900		 267 209 191 209 157 148		mA
Idle (MoU)		1.5-4		mA
Power off			50	µA

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